



ACTIVITIES

**"ALL IN LOVE WITH THE EARTH—
WE PROTECT THAT WHICH WE LOVE."**

ROBERT HAAS

Maryland Content Standards

Activity	Grades	Content Standards
Listening to Nature	K-12	English/Language Arts <ul style="list-style-type: none"> ❖ Language ❖ Listening
Listening to Nature & Responding Through Poetry	6-12	English/Language Arts <ul style="list-style-type: none"> ❖ Writing ❖ Language
Constructing a Watershed	K-12	Science <ul style="list-style-type: none"> ❖ Concepts of Environmental Science
Exploring the Watershed	K-12	Science <ul style="list-style-type: none"> ❖ Materials & Processes That Shape a Planet ❖ Flow of Matter & Energy (Grades 4-5 & 9-12) ❖ Skills & Processes – Applications of Science
Feel It, Draw It	K-6	Social Studies <ul style="list-style-type: none"> ❖ Geography English/Language Arts <ul style="list-style-type: none"> ❖ Listening
Exploring Interdependence	9-12	Science <ul style="list-style-type: none"> ❖ Concepts of Life Science ❖ Ecology ❖ Concepts of Environmental Science – Interdependence of Organisms ❖ Environmental Issues
Rivers of Maryland	4-12	
Test Your Maryland River Knowledge	4-12	Social Studies <ul style="list-style-type: none"> ❖ Geography

Listening to Nature

Activity 1

Grades: K-12

Materials:

- CD or tape of nature sounds.
- Writing supplies for teacher & students.

Listen:

Play the CD or Tape for a length of time appropriate to the group. Have the students close their eyes.

Listening Prompt::

"Close your eyes, relax, and absorb the sounds you will hear. Think about the colors, shapes places and settings. What pictures do you see in your mind? What feelings do you notice? Where are you? Who and what do you see?"

Respond through writing:

Younger Students: Share words, images and descriptions through teacher-directed brainstorming or in small groups.

Closure:

Convene as a whole group to share words and ideas. Develop class lists and word banks.

☐ **Suggested Vocabulary:**

- ❖ Attributes
- ❖ Visualize
- ❖ Imagery
- ❖ Mind's Eye

Listening to Nature and Responding Through Poetry

Activity 2

Grades: 6-12

Connect and Inspire: Read one or two poetry selections aloud (See Appendix A). Play the CD or tape and listen silently.

Materials:

- CD or Tape of water and nature sounds.
- Writing supplies for teacher and students
- One or two poetry selections from Appendix A.

Writing Prompt: "Think about our last activity's writing and the preparation the class did for this writing. Use those ideas and vocabulary to...write a vivid poem that shows your reader a mental image..."

Become Poets:

The following formats are offered for the teacher to choose the most appropriate:

- Diamante
- Haiku (or Japanese-like poems)
- Sense poems

Diamante

Diamante is a seven-line poem in the shape of a diamond. It gradually changes from one idea to a direct opposite idea.

Line 1	_____	Noun (topic)
Line 2	_____	2 adjectives describing line 1
Line 3	_____	3 "ing" verbs describing line 1
Line 4	_____	2 nouns about line 1, 2 nouns about line 7
Line 5	_____	3 "ing" verbs describing line 7
Line 6	_____	2 adjectives describing line 7
Line 7	_____	noun opposite to topic noun

Example:

**GROWING, SHRINKING, MOVING
GROUND, SAND, CITY, GLASS
SHAKING, BREAKING, PRODUCING
NOISY, QUIET
LAND**

Augustine Kang, Age 10
Anthology of Poetry by Young Americans

Haiku (or Japanese-Like Poems)

Haiku poems are about nature. The common form is three lines, translated in English-speaking countries as, a 5/7/5 syllable structure. In Japanese it is 17 sounds. In English this would be somewhere between 12 and 15 syllables, therefore permitting some variation in form. More important than form, is content and language.

Example:

**OLD POND...
A FROG LEAPS IN
WATER'S SOUND**

Matsuo Basho

Sense Poems

Think of the images that came to your mind when you listened to the water and nature sounds.

I see _____
I smell _____
I hear _____
I feel _____
I taste _____
I think _____

Example:

**I SEE THE SAGE-COVERED DESSERT
I SMELL THE FRESHNESS OF THE MORNING
I HEAR THE SCREAM OF THE HAWK
I FEEL THE CARESS OF A BREEZE
I TASTE THE DEW ON THE WIND
I THINK THE NEW DAY IS BORN**

The English Room, 30 Days of Poetry, Day 19, website:
<http://members.tripod.com>

Conferencing for editing, revising and final drafts can continue on another day.

Constructing a Watershed

Activity 3

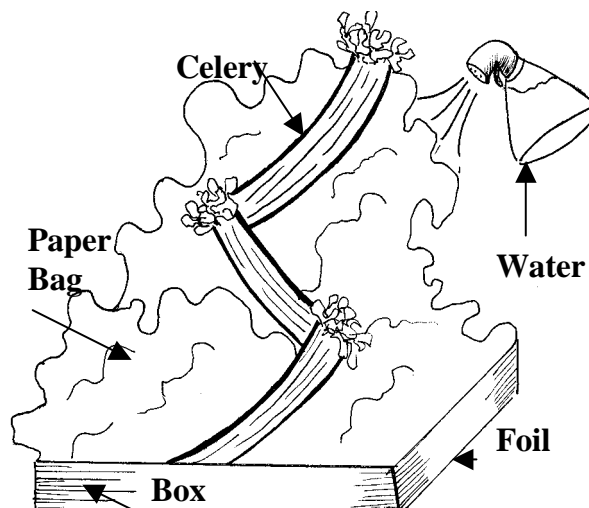
Grades: K-12

Procedure:

1. Read "The Blue Planet" passage (Appendix B) to the students and reflect with them.
2. Give the information provided by River of Words about watersheds.
3. Display the illustration of Spring Water (See Appendix C). Discuss the importance of elevation in a watershed (high to low).
4. Model/construct an example:
 - a. Wrap box top or cookie sheet with aluminum foil.
 - b. Crumple waste paper or paper bags to build elevation.
 - c. Cover the crumpled paper with crumpled construction paper, making ridges and valleys.
 - d. Place celery stalks as water channels.
 - e. Use the foil to make little ponds and lakes.
5. In groups, students construct their watershed models.

Materials:

- Box lid or cookie sheet – 1 per group.
- Paper grocery bags or recycled waste paper.
- Construction paper – 1 large piece per group.
- Celery stalks.
- Aluminum foil.



Vocabulary:

- | | |
|-------------------------|-----------|
| • Watershed | • Ridges |
| • Elevation | • Valleys |
| • Downward | • Flow |
| • Springs, Lakes, Ponds | • Channel |
| • Body of Water | |

Exploring the Watershed

Activity 4

Procedure:

1. Have students color different parts of the watersheds that were developed in Activity 3 with markers: (the following are examples. You may want to have students develop a key of their own).
 - a. Valley – Brown
 - b. Ridges – Blue
 - c. Mountaintop – Black
 - d. Settlements – Red
 - e. Forest – Green
2. Spray each watershed as though it were raining.
3. Observe and record findings or results in student journals. (Encourage both illustrations and written responses).
4. Class Discussion: Reflect upon the interdependence of the living and non-living elements of the watershed. Ask: "What happened to the color of the water by the time the water reached the lowest part of the watershed?"

Materials:

- Water soluble markers.
- Water spray bottle.
- Student's watersheds.
- Student journals.

Extension Question: If our models represent Maryland, where is the Chesapeake Bay? What do you think the watershed drainage brought to the Bay?

Vocabulary:

- | | |
|-------------------|-------------------------|
| ❖ Settlement | ❖ Downward |
| ❖ Drainage | ❖ Springs, Lakes, Ponds |
| ❖ Atmosphere | ❖ Ridges |
| ❖ Gravity | ❖ Valleys |
| ❖ Interdependence | ❖ Body of Water |
| ❖ Watershed | ❖ Flow Channel |
| ❖ Elevation | |

Feel It! Draw It!

Experiencing a Musical River

Activity 5

Grades: K-12

Procedure:

1. Explain to the class that they will hear composer Smetana's musical image of the growth of a Czech River, the Moldau.

Extension: Locate the river on a map, explore the river's setting, the composer's purpose. Compare to a nearby Maryland river using a topographical map.

Alternative Approach: Play the music and discover the children's interpretations; THEN explain the composer's vision of a river.

Materials:

- Music CD or Tape, *The Moldau* (a tone poem that musically describes the Moldau, a Czech River, from its sparkling beginning to the sweeping grandeur of its passage).
- Colored streamers, ribbons or scarves.
- Art supplies.

This is much more time consuming but encourages a great deal of vocabulary development and critical thinking!

2. Listen to at least the first four minutes of *The Moldau*. Discuss how they could move their bodies in response, expressing the actions it inspires. Show them the streamers and scarves available.

Lead them to set parameters for the activity, such as: No touching while moving, maintaining silence, using streamers expressively (Does the name *streamer* suggest movement similar to a stream?)

3. Using the streamers, the teacher or one student should model the movement to the music.
4. Proceed with full class participation. This is a very popular activity, especially if you repeat it often! Play the music and encourage the students by moving along with them because some may feel uncomfortable without positive reinforcement.
5. Regroup and discuss feelings, images and impressions of the growth of the river.

Expressing Images Through Art:

After experiencing the music of the river through large muscle motion, children will express themselves through sketching.

Procedure:

1. Pass out art supplies.
2. Play a nature tape or repeat *The Moldau* as the children and adults draw with pencils. It is very important that children see the adults sketch, revise, compromise, improve and experiment along with the children. Reluctant artists usually take heart when they notice a teacher struggles.
3. Pause from time to time to praise creativity and to allow students to ask questions about composition and technique.
4. As students become satisfied with their drawings, encourage them to prepare final masterpieces by assembling sketches into one piece and adding color in an available medium.

Frame It:

Method A:

1. If a student is satisfied with of his/her picture, prepare and attach construction paper frames.

Decorating the frame, with spatter painting will provide further experience with liquids as well as enhancing the frame.

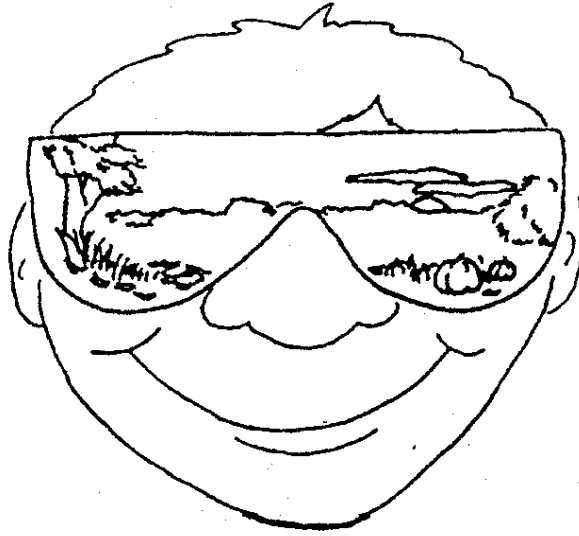
2. Prepare a final copy of the student's poem composed in Activity 2.
3. Combine the poetry and the art attractively as a completed project.

Method B:

What did you see in your mind's eye? The teacher should model this first with his/her picture.

1. Provide students with templates for eyeglasses (See Appendix E).
2. Use the frames to select favorite portions of their pictures.

3. Trace around the template and cut out the shape from the picture.
4. Mount the "Magic Eyeglasses" on the face pattern to show that the child has seen through his/her mind's eye magic glasses.
5. Prepare final copies of student poetry from Activity 2.
6. Attach each poem beside the face with the magic eyeglasses for the finished project.



Gallery Showing:

Display the final projects around the room. Play music or nature sounds as students circulate to observe and appreciate the masterpieces. You may wish to serve juice and a snack, just as art galleries do for an artist's "opening".

Reflection:

What did you see? What did something remind you of? Did anything surprise you? Did you notice any similarities between art projects? Differences? Are you more aware of a river and its watershed? How or why?

**THOSE WHO CONTEMPLATE THE BEAUTY OF THE EARTH FIND RESERVES
OF STRENGTH THAT WILL ENDURE AS LONG AS LIFE LASTS.**

RACHEL CARSON

Exploring Interdependence

Activity 6

--Nature has no reset button! River of Words

Grades: 9-12

Materials:

- Picture cards (See Appendix D).
- Ball of yarn.
- Writing materials.

Watershed Connections:

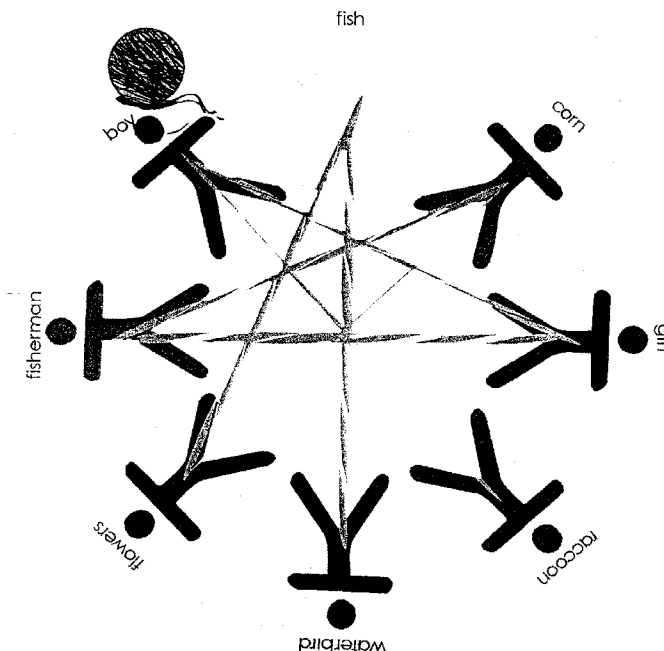
The goal of this activity is to demonstrate to students how the ecosystem functions and how each organism relate to others as parts of an interconnected system.

1. Pass out picture cards. The picture on the card is the student's character in the ecosystem.
2. Stand in a circle.
3. Pass the ball of yarn in a random pattern around and across the circle. Each student hands onto the yarn as it comes along and then passes it on while continuing to hold his/her portion of the yarn.
4. Criteria for Passing Yarn:

Give the ball to an inhabitant of the watershed that needs water.

The interwoven yarn represents the interdependence of the features and the inhabitants of the watershed.

At this point, the ecological system is in balance – needs are satisfied.



Changes Occur:

1. Create scenarios in which inhabitants' availability of useable water is interrupted.

For example: Pesticides from lawns run into the streams after rains. A factory dumps harmful waste into the river upstream from a city. Fertilizer and pesticide run-off from farms goes into creeks. A city dumps garbage on a riverbank. A drought. A flood. An earthquake. A new housing development built by the river.

2. Choose a scenario and think about who is affected. For instance:

When the factory dumps harmful waste into the river, the fish in the river will get sick and die because the water is poisoned. The child who is the fish will drop his piece of yarn because the fish's water needs are not being met.

When the fish die, the fisherman can no longer make a living. The fisherman must drop the yarn because his/her water use is no longer satisfied.

When the fish become ill, the water bird may eat a sick fish and also be poisoned. Whoever is the water bird must drop the yarn.

The raccoon may drink the poisoned water and get sick. The raccoon must drop the yarn.

3. After several children have dropped out because their inhabitant's water needs were not being satisfied, have the remaining student's tug on their yarn. The circle will distort. Gaps will occur. Some inhabitants will not be in their natural "place" or home.

The ecological system is no longer in a healthy balance. Some inhabitants are ill or dead; some have left their natural places or homes; many have to change the way they must make a living, etc.

3. Quickly reconstruct the circle and act out several more changes in the ecosystem.

Reflections:

Regroup and encourage critical thinking to help students conceptualize interdependence. You may choose to have the students write about their observations before your discussion.

- What happened when changes occurred in the water environment?
- Did any change affect some inhabitants of the watershed more than others? Why or why not?
- What changes hurt the water system? How or why?
- Can you think of changes that would not hurt the natural system? (For example: laws, pollution controls)
- What one thing you do in your everyday life might affect our watershed?
- Do you think people realize how their actions affect others? Explain.

Background Information:

Information for teacher background when dealing with the subject of change can be found in *Journeys and Destinations*, the teacher handbook produced by the Center for Gifted Education, College of William and Mary, Williamsburg, Virginia.

They suggest these generalizations:

Change...

...is pervasive; it permeates our lives and our universe.

... is linked to time; time is variable.

...may be perceived as systematic or random.

...may represent growth and development or regression and decay.

...may be positive or negative.

...may occur according to natural order or may be imposed by individuals or groups; causes are natural or human-made.

Activity 7

Grades: 4-12

Rivers of Maryland



Q C A R C M U X D O E G V G L U R A H X Y E A B O
O G V P W R F J J E L K C N N Z S S P C G U N O C
R F R A A W B G W K W A H I B I U H A A G N A H C
T S A E H T R O N Y M S I K Z B K C V M K O C E A
I Z C U O T U Q T O E V C O G K O A I O C Q O M B
K P L A Z K Q X T S M K A N O N S L U H D B S I O
I E X O S V P O E F E G M A O I E S E Q I E T A T
A G N O H S P O G N A W A M B S B S J G S O I T T
H U M Y V S E U C S T T C O X G T I A H R N A O R
U A K A Z B N L N M J U O D Z E A N T P X Q A V O
L Y T I G P G P M B W G M X R C N G F U K X W R P
E I O S O O O M R A T F I Q R E K N A T P O H C T
N E T W A X T H S R N H C A M O K F O N D K E D Z
I S D T B E V H E U L J O E W I C O M I C O C R A
T E A I L I E D Y U I A S Q S E V E R N S T J A E
R P O R O E A Y Y L N S Y N E H G O I H G U O Y K
A A D R F V C N W N E B I I H A Y E B H S K S E O
M T S Y O A H H A X Y A F B J J I I K V K C O U C
T A M N X N S H O F T W L I E U M B R O I A U Y I
S P O I U M E S F P B L A C K W A T E R M B T U T
J S H N D U Y P A R T H B S T M A R Y S H O H V N
I C S J Q D O M H S Q A A S E U Q Z H S H X C B A
Z O W S E L L P X N F B N N Y O P Q Y X Q K H O N
C Q U Z W N D E L V W X Z K A C I S R O C W V O P
J S D J G N V U V V N M V W L S H G G S I D T Z G

ANACOSTIA	ELK	PATAPSCO	SUSQUEHANNA
BACK	GUNPOWDER	PATUXENT	TRANSQUAKING
BIG ANNEMESSEX	HONGA	POCOMOKE	TRED AVON
BLACKWATER	LITTLE CHOPTANK	PORT TOBACCO	WEST
BOHEMIA	MAGOTHY	POTOMAC	WICOMICO
BUSH	MANOKIN	SASSAFRAS	WYE
CASSELMAN	MIDDLE	SAVAGE	WYE EAST
CHESTER	MILES	SEVERN	YOUGHIOGHENY
CHICAMACOMICO	MONOCACY	SOUTH	
CHOPTANK	NANTICOKE	ST MARTIN	
CORSICA	NORTHEAST	ST MARYS	


Teacher's Solution can be found in Appendix F.

TEACHER COPY PAGE

Activity 8

Test Your Maryland River Knowledge

Use a Maryland Map to help you find the answers!



Grades: 4-12

- 1 Which Maryland River runs through the Patuxent Wildlife Research Refuge?**
- 2. Which river lies entirely in Harford County?**
- 3. Which river leads to the Baltimore Inner Harbor?**
- 4. What is the name of the river that borders the west side of Maryland, Virginia and goes through Washington, DC?**
- 5. Which river is named after a tree?**
- 6. Which is the longest Eastern Shore River and entirely in Maryland?**
- 7. Which river is named after an animal?**
- 8. What river is at the head of the Bay and provides half the freshwater of the Chesapeake Bay?**
- 9. Annapolis is located on this river; can you name it?**
- 10. This river is home to the city of Salisbury. It has two working ferries on it. What river is it?**
- 11. Which river lies entirely in Maryland?**
- 12. Which river means “Black water” and is famous for its loblolly pines and cypress swamps?**

TEACHER COPY PAGE

Teacher's Solution can be found in Appendix G.